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## In search of causative structures in the root-based morphology: the case of Polish *roz-/roze-* causatives<sup>1</sup>

### Abstract

The paper deals with a wider problem of the representation of causative structures in the root-based generative model of morphosyntax illustrated here with the Polish causativizing morpheme *roz-*. Following Koontz-Garboden's (2009) analysis of anticausative verbs, we propose that the phenomenon of causation should be separated from the introduction of the additional causer argument brought in by the voice projection. In our analysis *roz-* is seen as the head of the active voice projection, as opposed to *roz- się*, the non-active *voice* head. Such an analysis allows us to account for the distributional properties of *roz-* versus *roz- się* in Polish. In the analysis of the typology of roots which can serve as bases for the causative structures taking the *roz-* voice heads, the typology of roots developed by Embick (2009) to account for the properties of states and stative passives has been adopted, as it seems to work in the case of the roots deriving causatives. The roots appropriate for the predicates of states cannot derive the *roz-* causatives in Polish, while these appropriate for the predicates of events form such causatives. The analysis ties in with recent proposals in root-based research into verbal valency, and contributes to the overall model of valency-related derivations in root-based approaches.

### Key Words

causativization, unaccusative, anticausative, root, morphosyntax, Polish

### Streszczenie

Artykuł poświęcony jest zagadnieniu kauzatywizacji w modelu morfosyntaksy generatywnej opartej na rdzeniu wyrazowym. Procesy kauzatywizacji analizowane są na podstawie czasowników z morfemem *roz-*. W analizie postulowane jest oderwanie funkcji kauzatywnej od mechanizmu dodawania argumentu sprawcy. Badania w tym kierunku oparte są na pracy Koontz-Garbodena (2009). Morfem *roz-* został uznany za człon główny wprowadzający poziom struktury odpowiadający za kategorię strony czynnej. Jest on przeciwstawiony formantowi nieciągłemu *roz ... się*, który odpowiada za tworzenie pewnych czasowników

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<sup>1</sup> I would like to express my gratitude to both anonymous reviewers of this paper. I have tried to implement their suggestions and this attempt has resulted in a thoroughly revised analysis of stative and experiencer roots. Many of their questions await further study, especially these connected with morphologically complex variants of anticausatives in Polish.

antykauzatywnych w języku polskim. Przy użyciu typologii rdzeni Embicka (2009), zaproponowanej dla nieco innych struktur czasownikowych, udaje się stwierdzić, że rdzenie, które mogą wystąpić jako predykaty stanów, nie tworzą czasowników kauzatywnych interesującego typu, podczas gdy rdzenie, które mogą istnieć jako predykaty zdarzeń nadają się na bazy tej derywacji. Analiza polskich czasowników pokazuje jednocześnie, że hipotezy formułowane obecnie w badaniach struktur walencyjnych opartych na rdzeniu doskonale sprawdzają się w przypadku prezentowanego materiału polskiego, dodatkowo potwierdzając słuszność tego kierunku poszukiwań językoznawczych.

### Słowa kluczowe

kauzatywizacja, czasowniki nieakuzatywne, czasowniki antykauzatywne, rdzeń, morfosyntaksa, język polski

## 1. Introduction

In recent studies on valency, causative formations are usually mentioned in relation<sup>2</sup> to anticausatives.<sup>3</sup> While the formation of anticausative structures in Polish is a well-researched area of morphosyntax (recently by Junghanns et al. 2011; Rościńska-Frankowska 2012; Malicka-Kleparska 2012a), causatives are by no means as popular. It is generally acknowledged that Polish, like other Slavic languages, has a productive anticausativization rule building unaccusative predicates with the clitic *się*,<sup>4</sup> while the valency of the basic causative verb decreases.<sup>5</sup> Causativization in Polish, however, has attracted little attention within the generative framework. In an early generative study Olszewska (1986) analyzed causative constructions in Polish, but since then the theory has changed beyond recognition.

In this paper we will tackle just one causative operation in Polish and we will try to show on this example the complex nature of the issues connected with causativization. We will take up the data where the causative character of the morphologically complex verb correlates with the presence of the mor-

<sup>2</sup> Either the causative variant is taken to be derived from the anticausative one, see e.g. by Dowty (1979); Lakoff (1968); Rappaport Hovav and Levin (2012), or the anticausative verb is believed to be secondary, see e.g. by Chierchia (2004); Grimshaw (1982); Koontz-Garboden (2009); Levin and Rappaport Hovav (1995); Reinhart (2002).

<sup>3</sup> In root-based approaches causatives and anticausatives share a common root, without direct derivational relationship between them, see, among others, Alexiadou et al. (2006); Alexiadou and Doron (2012); Doron (2003); Embick (2009).

<sup>4</sup> For the status of *się* in unaccusatives see e.g. Laskowski (1984a); Junghanns et al. (2011); Malicka-Kleparska (2012a); Rościńska-Frankowska (2012) and against more extensive linguistic material, Rivero and Sheppard (2003).

<sup>5</sup> How the valency decrease is obtained depends on a particular approach, the most recent proposal being that reflexivization is at the root of the process, see Junghanns et al. (2011).

pheme *roz-*<sup>6</sup>/*roze-*<sup>7</sup>. Polish has a number of morphological exponents realizing the causativizing function, but *roz-* finds its way into a significant number of varied formations. In contemporary Polish the morpheme has been known to produce new words, like for instance a very recent, though colloquial *rozkmینیć* 'get at the heart of something, work something out' and thus the data with *roz-* constitute a good starting point for a much needed broader discussion of (Polish) causatives. More particularly, we will try to establish what position can be taken up by *roz-* in Polish causatives and related formations and how the semantics of the structure with this formative correlates with the structural position of *roz-* with respect to the basic root. We will argue that *roz-* performs the specific key function of the voice head element in Polish causatives and we will investigate the properties of the structures it appears in as well as of the verbal roots deriving the relevant causatives.

The theoretical framework relied on here will be introduced in section 2. A preliminary exposition of causativization in section 3 will highlight the standpoint that the causative meaning should be read off the proposed clausal structure and does not depend directly on the presence of the external argument. Subsection 3.1 will outline Koontz-Garboden's (2009) findings bearing on the independence of causativization from the co-existence of the external argument. Polish unaccusatives will be tested for the presence of the causative meaning in their structures (3.2). The analysis severing causation from the presence of the external argument will be situated against a broader spectrum of the relevant linguistic literature in subsection 3.3. Section 4 will be devoted to the research focused on roots appropriate for building causative verbs. Schäfer's (2007) and Embick's (2009) typologies will be introduced here in sections 4.1 and 4.2, respectively. Polish causative material marked with prefixal element *roz-* will occupy section 5. Particular subsections encompass superficially distinct root types co-occurring with this prefix: subsection 5.1 concerns

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<sup>6</sup> Szymanek (2010: 166–169), whose recent monograph includes the said prefix, does not mention its valency changing properties. Wróbel (1984: 504) adumbrates these functions of *roz-/roze-* which we concentrate on here. Rościńska-Frankowska (2012) altogether undermines the role of prefixes in the formation of causatives in Polish. This may be true about some prefixes, but we do not think such reasoning can be applied to *roz-/roze-*.

<sup>7</sup> For the alternations involved see Gussmann (2007: 239–241). For our purposes the alternations are immaterial. From now on we will refer to both allomorphs as *roz-*. In fact, as Olszewska (1986: 79) maintains, the causative derivatives of the relevant kind have the complex circumfix-like formant: *roz-* -i(ć). The basic form is not only prefixed, but also suffixed. To simplify the matters, we will refer to the morpheme as *roz-*, as the prefixal data are much more salient in Polish than vocalic patterns involved in the formation of stems (see, however, Laskowski (1984b) for detailed information about the structure of the Polish verb and the role of stem forming suffixes, as well as the classic templates supplied for the verb in Slavic by Jakobson (1948) and in Polish by Schenker (1954). The structure of the verbal representation which in Polish may serve as the derivational basis of more complex forms has been very recently taken up by Bloch-Trojnar (2013), albeit in the lexicalist tradition.

Schäfer's (2007) unspecified cause roots, 5.3 stative roots, and 5.4 roots of experienter verbs. Section 5.2 will establish the position of *roz-* as a voice head in Polish causatives. The paper will close with conclusions and suggestions for further research (6).

In the text we opt for the type of analysis where the causative semantics is a derivative of proposed structures. The whole group of causatives shares the class of roots, superficially varied, which, can however be reduced to a single characteristic: they are good predicates of events.

## 2. Theoretical framework

The theory which will be adhered to in this text represents a brand of Distributed Morphology (Halle and Marantz 1993; Marantz 1997; Alexiadou 2001; Embick 2004; Pytkänen 2008) whose major claim is that derived words are productively formed in the syntax, by means of rules which follow syntactic regularities adopted from Chomskyan Minimalist Program. Heads, realized by overt or zero morphological material, attach to various positions in a structure which is potentially clausal. At the heart of a linguistic derivation according to this theory lies (after Hale and Keyser 1993, 1998; Alexiadou and Agnostopoulou 2004; Embick 2004; Arad 2005; Pytkänen 2008; Alexiadou 2010; Alexiadou and Doron 2012; Lomashvili 2011) the ultimate referring unit entered in the lexicon, i.e. the root, which may be category-neutral.<sup>8</sup> The root does not carry any information concerning the external argument. The information about this participant is contributed by the structure (see Marantz 1984; Kratzer 1996; Pytkänen 2008).

The theory of morphosyntax resting on such initial assumptions allows researchers to bring new insights into the area of valency rearrangement phenomena. For instance, by looking at the relationships within the valency system which are not to be directly expressed via derivation, Alexiadou and Doron (2012) have been able to reduce the rich valency system of world languages to two major voice distinctions, addressing similarities between the passive, reflexive, anticausative<sup>9</sup> and middle voice (as opposed to the active

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<sup>8</sup> Whether roots are equipped with information concerning their categories is an open issue. Embick (2004, 2009), whose particular solutions concerning roots will be important in this text, opts for this possibility.

<sup>9</sup> In this paper we will use various terms to refer to the verbs which describe the change of state of their internal arguments and which at the same time do not require the presence of any instigator of this change in their syntactic environment. A thorough discussion concerning the status and the problems associated with delimiting this class of verbs is to be found e.g. in Levin and Rappaport Hovav (1995: 1–31). There such verbs are referred to as unaccusatives. However, various sources which we will use in this paper name various subclasses of these verbs differently. We will follow these sources in their original terminology as far as possible, unless this prac-

voice) by means of a common element of structure. In approaches based on the lexicalist principles, passive structures are the work of syntax, reflexives are the work either of syntax or of the lexicon (depending on the language), while anti-causatives and middles may be related by some semantic extension rule (see, among others, Chierchia 1995; Reinhart and Siloni 2005).

In this paper we will rely on the above-mentioned theoretical tenets to set the background for our own findings, which are such that causative meaning in Polish is predictable on the basis of the structure which may be proposed for causative verbs and that bases of causatives in Polish can be shown to constitute a coherent class of roots. In other words causativization in Polish, at least in the case of *roz-*, is predictable and can be productive, hence accountable for by the syntactic component along other morphosyntactic phenomena.

### 3. Causativization as a morphosyntactic phenomenon

In this section the morphosyntactic properties of causative verbs will be adumbrated and illustrated with some examples from the languages in which the valency enhancement is accompanied by morphological exponents.<sup>10</sup> This will be followed by a discussion advocating the separation of causative meaning from the presence of the external argument (see sections 3.1, 3.2, 3.3).

Various languages involve processes which result in the addition of morphological material to a basic form and this surplus of form is accompanied by an enrichment of the event structure with an additional participant, the Causer of the event. These processes can be illustrated with the following examples:

(1) Polish:

- a. *Chłopak ruszył powoli.* 'The boy started slowly.'
- b. *Szklanka gorącego mleka rozruszała chłopaka.* 'A hot glass of milk has speared the boy on.'

tice causes misunderstanding. Thus we will talk about anticausative verbs in those cases where morphological exponents suggest the derived nature of unaccusatives. Unfortunately, this term prompts a definite direction of the derivation, which in our approach is not a legitimate claim to make: here anticausatives are just unaccusatives/change of state verbs with morphological exponents. Another term we will use encompasses a subclass of unaccusative inchoatives. This subclass is distinguished after Langendoen (1969: 151) as: "[i]nchoative – designating a one-place predicate that asserts that the state of affairs described in its argument comes about". Such verbs usually stress the beginning stage of a process. The varied terminology used in our work reflects multifarious nature of unaccusativity itself.

<sup>10</sup> The presence of additional morphological material is not a prerequisite for the existence of a causative verb. In languages like English causative and unaccusative verbs usually do not differ morphologically, e.g. *John broke a branch* vs. *A branch broke*, but they do not belong to the morphosyntax.

English:

- a. *John is bold.*
- b. *This success emboldened John.*

Georgian:

- a. *k'rep-s* 'sb. picks it.'
- b. *a-k'rep-in-eb-s* 'sb. makes sb. else pick it.' (Lomashvili 2011: 60)

The examples in (1) show the distinction between non-causative and causative structures containing the same root: causatives introduce additional arguments. The additional participant is equipped with the role of the Causer of the event specified by the non-causative predicate.

In the approach to morphology which codes valency rearrangements in terms of verbal structures based on roots, the more complex situation illustrated in the (b)-examples, with more participants involved, must be reflected by a richer morphosyntactic representation than in the (a)-examples. The difference between the structures in (a) and (b) may seem monoblock – the addition of one argument with the unvarying role of a Causer. However, when we consider a broader range of languages, we will notice that the presence of an additional argument and the causation effect do not have to go hand in hand and thus they may be separate phenomena, represented in distinct ways. Such a separation can be observed in the case of e.g. applicatives, Involuntary State Constructions, weather verbs (see e.g. Pykkänen 2008; Lomashvili 2011; and in particular Rivero et al. 2010; Rivero and Arregui 2012; Malicka-Kleparska 2012b, 2012c in reference to Polish), where the valency increase is not accompanied by the causative meaning.

Likewise, causative meaning can be visible independently of the (overt) presence of the external Causer argument. In this context passive structures or dispositional middles can be mentioned (see e.g. Reinhart and Siloni 2004; Alexiadou and Doron 2012).

The length limitations of this paper prevent us from discussing the above interrelations in any detail. Instead we will concentrate on less obvious arguments for the separation of causation from the external argument coming from the area of entailment.

### 3.1. Koontz-Garboden's (2009) Monotonicity Hypothesis and Cause preservation in anticausatives

Among the sources which consider the separation of causation from argument addition in morphosyntax (see 3.3 below), an important contribution is made by Koontz-Garboden (2009), who argues for such dissociation in the case of anticausative verbs. For his Monotonicity Hypothesis<sup>11</sup> to be tenable, the Cause

<sup>11</sup> For precise formulations and justification of the Monotonicity Hypothesis see Koontz-Garboden (2009, 2012).



operator must stay in anticausatives derived from causatives, although the causing argument is lost in the derivation. Koontz-Garboden insists that a derived anticausative verb is associated with a representation of Cause quite independent from the absent Causer argument. The data which he concentrates on are anticausatives created in the reflexive fashion (see also Chierchia 2004; Reinhart and Siloni 2004, 2005; Everaert et al. 2012a), so from bi-argumental predicates. Consequently, anticausatives should imply the Cause element, as it is present with their bases, transitive change of state verbs. For us, the critical moment is the dissociation of the causative layer of the representation from the presence of the causative external argument, which is another way of looking at Koontz-Garboden's data.

The arguments offered by Koontz-Garboden for the separation and which we can test for the Polish data<sup>12</sup> predominantly come from the phenomenon of entailment. First and foremost, a causative verb does not have to entail the corresponding anticausative. Such an entailment could be expected since the causative verb is believed to 'contain' the meaning of the change of state of its Theme: if somebody broke the cane then the cane is broken. Consequently, if the first part of this statement is true, the second one must be true as well. Koontz-Garboden proves this reasoning to be groundless if the inchoative situation of the Theme is expressed in terms of a (morphologically marked) anticausative verb:

(2) The cane did not break, you broke it.

Likewise for Polish:

(3) *Laska nie złamała się, to ty ją złamałeś.* 'The cane did not break, you broke it.'

Koontz-Garboden interprets these entailment phenomena as evidence that both the clauses in a complex sentence are caused by distinct Causes: the cane has not been broken by a different Causer, so to speak, than it has been broken by, hence no entailment holds between the clauses in the complex sentence.<sup>13</sup> Thus anticausative verbs are not associated with overt arguments causing the change, yet Causes are present in their semantics.

We may take these entailment phenomena as evidence in favor of postulating a separate Cause layer in the structural representation of anticausative verbs or, alternately, anticausatives can be equipped with a characteristic

<sup>12</sup> Koontz-Garboden (2009) mostly concerns himself with Spanish and Ulwa.

<sup>13</sup> An anonymous reviewer poses the question why in Polish the sentence *Woda nie rozfalowała się, to wiatr ją rozfalował* 'Water did not roll in waves, the wind made it roll' is grammatical, while the sentence *\*Woda nie faluje, to wiatr ją rozfalował* 'Water is not rolling, the wind has made it roll' is not. These issues will be discussed in greater detail in sections 4.2 and 5. To preview the solution, however, we will claim that in the first case the situation is like in (3), while in the other case we have a stative verb *falować* – with the same root in a different – predicate of state – position and with no structurally encoded causation.

structure from which the causative reading results. The first type of solution would follow the general lines drawn by Alexiadou and Doron (2012). Although they do not postulate the causative layer of structure for their anticausatives, they introduce such a projection in causative structures (headed by  $\gamma$ ), which could be easily adopted if causation is recognized as part and parcel of anticausatives. The other solution, which we will adopt in the course of our analysis, has been prompted by the representations of target state verbs by Embick (2009). Embick does not assign a separate layer of structure to produce the causative reading for anticausatives, but proposes a specific structure for the verbs with inchoative (target state) interpretation (see sec. 4.2), from which the causative semantics is gleaned (see (11) below). We have decided on a variant along the lines taken by Embick over the otherwise elegant separate layer model since Embick's structures equally apply to morphologically marked anticausatives and to such which are not morphologically marked in any obvious way. Koontz-Garboden (2009), Alexiadou (2010), as well as Alexiadou and Doron (2012) make it clear that their models apply to morphologically marked unaccusatives, decidedly excluding unmarked ones. Particular levels of structure contain morphological material and thus unmarked unaccusatives will have poorer structure than anticausatives equipped with morphological exponents. The two classes are predicted to behave differently in language. Our investigations of unaccusatives in Polish carried out below (see section 3.2) and elsewhere (see Malicka-Kleparska 2012a) show distinctly that morphologically marked and unmarked unaccusatives behave in Polish in the same way in most respects (see however section 5.2). Embick's model, quite apart from the fact that it allows us to represent all the necessary information without redundancy and doubtful theoretical concepts, does not differentiate between marked and unmarked forms, which is just what is needed for the Polish data.

### 3.2. Polish marked and unmarked unaccusatives and Cause preservation

Before we proceed with other arguments adopted from Koontz-Garboden (2009), we have to make a detour into the area of Polish unaccusatives to modify Koontz-Garboden's ideas about anticausatives versus other unaccusatives in accordance with the Polish facts.

Polish data speak in favor of deriving all unaccusatives (morphologically marked and unmarked) directly from roots with similar merge operations. The entailment phenomena will be focused below and they will show that anticausatives with *się* and unaccusatives without such morphological marking point alike to the presence of two different causing forces for all unaccusatives:



## (4) Unmarked unaccusatives:

- a. *Ona nie utonęła, to ty ją utopiłeś.*  
'She did not drown, you drowned her.'
- b. *To nie osiadło, ty to osadziłeś.*  
'It did not sink, you sank it.'
- c. *Galareta nie zastygła, ja ją sama zastudziłam.*  
'Jelly did not set, I set it myself.'

## (5) Marked anticausatives:

- a. *Student nie zniechęcił się, to ty go zniechęciłeś.*  
'The student did not give up, you dissuaded him.'
- b. *Żołnierze nie cofnęli się, to ty ich cofnąłeś.*  
'Soldiers did not withdraw, you withdrew them.'
- c. *Dziecko nie przeziębilo się, to ty je przeziębilesz.*  
'The child did not chill, you chilled it.'

The mono-argumental verbs in (4) and (5) are equally suggestive of the presence of the Cause element. Other kinds of mono-argumentals do not behave in the same way. Unergatives in (6) will illustrate the difference:

- (6) a. *\*Ona nie śmiała się, to ty ją rozśmieszyłeś.*  
'She did not smile, you made her smile.'
- b. *\*Pies nie biegał, to ty go wybiegałeś.<sup>14</sup>*  
'The dog did not run, you walked it.'
- c. *\*Dziecko nie siusiało, to ty je wysiusiałeś.*  
'The child did not pee, you made it pee.'

Unergatives do not have the Cause semantics encoded in their structure and so they cannot be parts of grammatical sentences of the relevant kind. Negation cannot relate to the Cause of the unergative sentence, as it has none; it must scope over the whole event, which is presented in the transitive declarative sentence. Consequently, the complex sentence cannot be processed.

Koontz-Garboden (2009) puts forward also other arguments for the presence of Cause with anticausatives. For instance anticausatives can appear with the *by itself* phrase, suggesting causation, while e.g. stative verbs cannot take such PPs. An analogical situation obtains for the Polish data; again no distinction can be noticed between morphologically marked and unmarked unaccusatives:<sup>15</sup>

<sup>14</sup> The examples involving unergatives have a somewhat colloquial flavor, although they belong to the lexicon of Polish speakers. Polish does not have a rule productively forming transitive verbs on the roots which appear in unergatives. Such verbs are occasionalisms with a jocular character, at least at the beginning of their lexical history.

<sup>15</sup> See, however, Jabłońska (2007) for a different stand on the Polish data, critiqued in Małicka-Kleparska (2012a).

- (7) Unmarked unaccusatives:  
*Znieruchomiał sam z siebie.*  
 'He quietened by himself.'

- (8) Marked unaccusatives:  
*Mysł narodziła się sama z siebie.*  
 'The thought got born by itself.'

Stative verbs, as in Koontz-Garboden's data, do not accept such PPs:

- (9) \**Postrzegął sam z siebie.* 'He perceived by himself.'  
 \**Mieszkał sam z siebie.* 'He lived by himself.'  
 \**Spał sam z siebie.* 'He slept by himself.'

We will account for this state of affairs in the course of our analysis (sections 5.1, 5.3 and 5.4) by showing that only the roots which are good predicates of events reside in the structures with causative meaning, while the roots in (9) are good predicates of states.<sup>16</sup>

Having considered the entailment data and the occurrence of causative PPs discussed in this section, we feel entitled to claim that unaccusative verbs in Polish possess structures interpretable semantically as implying causation. These structures, however, are not tantamount to the introduction of additional arguments.

<sup>16</sup> Another explanation may be an option here as well. Segal and Landau (2012: 243) show that certain verbs have path semantics encoded in them and this path meaning has syntactic consequences. For instance directional PPs can be used with such verbs. Other verbs, although their meaning should allow the same modifications, do not tolerate such phrases. This claim can be illustrated with *The branch fell to the ground* vs. \**It rained to the ground*. In unaccusatives (and inchoatives in particular) the path reading manifests itself as the change of state that the argument undergoes, whereas in states of the type represented in (9) no path, no vector of change or movement is implied. The phrase *sam z siebie* may occur only with verbs which have the Cause projection and are consistent with the path reading. Notice that in Polish the phrase *sam z siebie* contains the preposition *z*, which in other contexts has directional uses, e.g. *z domu* 'out of the house', *z miasta* 'from a city', etc. This path meaning trace remaining in the expression *sam z siebie* in Polish (literally: 'alone out of oneself') reflects the path meaning of the verb so that the two units of structure are semantically congruous. Stative verbs do not have roots allowing the path reading, they do not participate in the structures that allow causative interpretation and are not congruous with *sam z siebie*. The problem with such a solution will become obvious in sec. 5.3, where we will analyze the statives which have corresponding causatives. Possibly their roots are associated with the path meaning too.

### 3.3. Other proposals for distinguishing causation from the augmentation of valency

Other researchers also propose independent projections for Cause-related phenomena and for the addition of arguments. Pylkkänen (2008: 83–84) extensively argues that causatives are built not only and not always of the addition of an external argument. The Voice head introducing this argument can be ‘bundled’ with the causative head constructing a morphosyntactic unit (e.g. in English), but Finnish desiderative causatives or Japanese adversity causatives in Pylkkänen (2008), or Georgian adversity causatives in Lomashvili (2011) constitute cases where Cause and Voice (introducing an additional argument) have to be independent of each other.

Alexiadou et al. (2006) in their analysis of anticausative and causative verbs also argue that agentivity and causation should be syntactically represented with distinct heads. Again the arguments are based on the appearance of causative PPs with anticausative verbs in English, Greek and German. Schäfer (2007, Ch. 4) also shows, using data from various languages, that causation present in anticausatives is not to be identified with the presence of an external argument, even implicit. Embick (2009) represents causation not really as a structural element, but as a semantic interpretation of the relevant structure in which the target state and event are structural sisters and independent of other units. Approaches to causativizations which are not based on structure are also available; e.g. Neeleman and van de Koot (2012) argue that causation is a part of the semantic representation of causative structures, but it is not encoded as an additional layer of structure and does not result from the structure itself.<sup>17</sup>

The analyses proposed so far create theoretical constructs which are not easily observable in language data (additional layers of structure, heads, derivational links between anticausatives and causatives) and/or fail to connect the type of verb that can be derived with the kind of root it is based on. Here we will try to attain both the maximum simplicity without redundancy and stipulated constructs, and the uniform description of a class of the roots appropriate for the derivation of causatives in Polish.

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<sup>17</sup> Some other sources refrain from dividing the causative element from the addition of the external argument. See e.g. the approaches which add the predicate (CAUSE) to the unaccusative verb: Lakoff (1968); Dowty (1979); Williams (1981); Pesetsky (1995), etc. Another line of reasoning is present in the analyses where arguments are characterized by the presence of the causative feature (cf. e.g. Reinhart (2000, 2002); Chierchia 2004, Everaert et al. (2012a).

## 4. Types of roots entering the causative alternation

### 4.1. Schäfer's (2007) classification of roots

Schäfer (2007) proposes a universal system in which certain classes of roots participate in causative and anticausative structures. In the following parts of this paper we will analyze the behavior of various classes of verbal roots in Polish in the light of their predilection for the causative formation, referring to Schäfer's (2007) system in order to see how Polish is situated with respect to more universal tendencies. We shall see that Schäfer's (2007) root classification is of limited use for Polish data (sections 5.3 and 5.4).

Schäfer (2007: 278) maintains that verbal roots are situated on the so-called spontaneity scale, where they range from agentive, through externally caused, unspecified as to the cause, to internally caused.<sup>18</sup> Only the roots which are marked for the unspecified cause participate in the causative/anticausative alternation. For instance causatives from the agentive roots which build also unergative verbs are not an option.<sup>19</sup>

In the course of our analysis we will show that only one subclass of Polish causatives is based on the appropriate roots (section 5.1), so Schäfer's system does not offer the distinctions relevant to the Polish data.

### 4.2. Embick's (2009) root typology

While the previous system of classifying roots re their participation in the causative alternation will prove to be of limited significance for Polish data, Embick's (2009) typology seems to work perfectly well for Polish *roz-* causatives. Embick's typology emerges as a result of his work on the distinction between states and stative passives, and not on causative verbs. We find it very interesting and theoretically significant that a similar system proves useful in a different area of morphosyntax.<sup>20</sup>

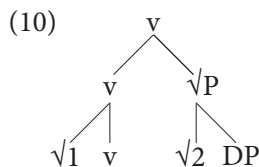
Embick (2009) claims that roots differ in the lexicon as to what they are good predicates of.  $\sqrt{\text{DARK}}$  is a good predicate of states,  $\sqrt{\text{BREAK}}$  of states and events, and  $\sqrt{\text{POUND}}$  of events. The verbal structure containing such roots can be schematically represented after Embick (2009) as:

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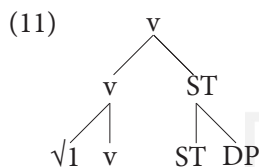
<sup>18</sup> This scale is widely adopted in other works within the root-based morphosyntax, e.g. in Alexiadou (2010) and Alexiadou and Doron (2012).

<sup>19</sup> See, however, fn 14.

<sup>20</sup> Unfortunately his analysis is available only in the handout form, thus it supplies scanty explanation and many issues are under-discussed, but no more extensive research has ever followed this pilot study. Thus our interpretation of his system may not be always faithful to Embick's intentions.



In this structure position 1 is available for predicates of events ( $\sqrt{\text{BREAK}}$ ,  $\sqrt{\text{POUND}}$ ), i.e. roots which are marked lexically as appropriate for predicates of events, position two – for predicates of states ( $\sqrt{\text{BREAK}}$ ,  $\sqrt{\text{DARK}}$ ). The configuration includes two sister nodes:  $v$  and  $\sqrt{P}$ , which represent the causing event and the caused state respectively. The causative relationship results from the specific structural configuration proposed in (11). This combination, with the positions filled in a specific way will serve us as the structure we propose for all unaccusatives:



The  $v$  which is the sister to the root  $\sqrt{\phantom{x}}$  may be filled with morphological material, e.g. *-en* in  $\sqrt{\text{QUIET}} + \text{en}$ .  $ST$  stands for the state caused by the manner<sup>21</sup> predicate (based on the root of the eventive type). Consequently, according to Embick,  $ST$ 's lexical content can remain empty. The  $DP$  is the internal argument of the clause in which such a verbal structure is situated.<sup>22</sup>

We will not go into any details of Embick's (2009) analysis here as it deals with a different area of morphosyntax. Suffice it to say that his root typology and the verbal structure whose semantic interpretation involves causation fit perfectly as instruments for analyzing unaccusative, stative and causative formations in Polish.

## 5. Polish *roz-* data

Polish causative formations having anticausative counterparts are built in a number of ways. Olszewska (1986) discusses syntactic (analytic) causatives as well as morphological causatives, where causation is connected with prefixation and suffixation, cliticization with *się*, suppletion, etc. Out of the rich

<sup>21</sup> The initial position dominated by the event node may be also interpreted as the MANNER node (Embick 2009). So the root specifies the manner in which the state should be understood.

<sup>22</sup> In intransitive clauses it will end up as the subject of the clause.

system of Polish causatives we have chosen just one morphological type, the prefixation with *roz-* exemplified below:<sup>23</sup>

- (12) a. *Pomruk zachwytu **roz**falował tłum.*  
 ‘The murmur of wonder swayed the crowd.’  
 b. *Zniecierpliwiony tłum **f**alował.*  
 ‘The restless crowd swayed.’
- (13) a. *Trener **roz**grzeszy Victora po meczu ze Stanami Zjednoczonymi.*  
 ‘The coach will pardon Victor after the match with the United States.’  
 b. *Goście w Grójcu skutecznością nie **gr**zeszyli.*  
 ‘The guests in Grójec did not sin by showing overly effectiveness.’
- (14) a. *Mróz [...] który **roz**iskrzyłby śniegową powłokę.*  
 ‘Frost, which would make the snow coat glitter.’  
 b. *Śnieg **isk**rzy na gałęziach.*  
 ‘Snow glitters on branches.’
- (15) a. *Upadł tak pechowo, że **roz**trzaskał kask.*  
 ‘He fell so badly that he cracked his helmet.’  
 b. *W pewnej chwili coś zaczyna **trz**askać pod nogami.*  
 ‘At one moment something begins to crack under the feet.’
- (16) a. *Przedszkolaki były szczęśliwe i zadowolone, że mogą **roz**weselić smutne buzie chorych kolegów.*  
 ‘The nursery children were happy and glad that they could make their ill friends’ faces cheerful.’  
 b. *Smutni **w**eseleją.*  
 ‘The sad ones grow cheerful.’<sup>24</sup>
- (17) a. *Drzewa **roz**zielenią pąki tylko po to, żebym mogła któryś zerwać.*  
 ‘Trees make their buds grow green only for me to pick one.’  
 b. *Gatunki o kolorowych liściach **z**ielenieją.*  
 ‘The species with colorful leaves grow green.’

The verbs in the examples in (a) contain the morpheme *roz-* and manifest causative semantics, while their counterparts in the examples in (b) have downgraded valency and varied semantics. This variation will be the topic of our investigations below; we will single out particular subclasses of causative verbs associated with (apparently) different classes of roots and distinct structures. The ultimate aim will be to show that the available structures allow us to glean

<sup>23</sup> The data are taken from *the National Corpus of the Polish Language*, included in the references as Przepiórkowski et al. (2012). The verbs in many cases differ significantly in meaning in the causative and the non-causative frame, but these lexical discrepancies are put aside in this paper.

<sup>24</sup> The forms of causative verbs and non-causatives in (16) show morphophonological alternations connected with the presence of the causative suffix *-i(ć)*, which accompanies the prefix. Details of these alternations are not relevant for our text but can be found in Laskowski (1984b).



from them the causative meaning and that the types of roots can be reduced to predicates of events without external theta roles to assign.

### 5.1. *Roz-* causatives with corresponding anticausative verbs, based on the roots with unspecified cause

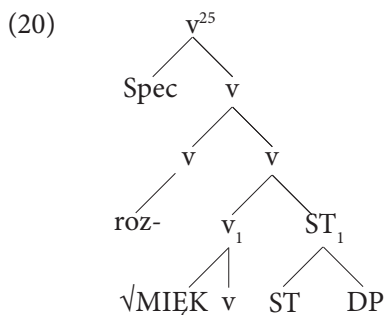
Some roots which participate in the causative alternation adhere to Schäfer's (2007) regularity stated for unspecified causes:

- (18) *rozjaśnić* 'lighten, caus.' vs. *jaśnieć* 'become light'  
*rozmiękczyć* 'soften, caus.' vs. *mięknąć* 'become soft'  
*rozrzedzić* 'dilute, caus.' vs. *rzednieć* 'become diluted'  
*rozzielenić* 'cause to become green' vs. *zielenieć* 'become green'  
*rozweselić* 'cheer up, caus.' vs. *weseleć* 'become cheerful'  
*roztrzeźwić* 'sober up, caus.' vs. *trzeźwieć* 'become sober', etc.

Since the cause is not pre-conditioned by the root, for each verb we may have grammatical sentences with a number of various causers, both animate and inanimate:

- (19) a. *Malarz rozjaśnił portret.*  
 'The painter lightened the portrait.' (Agent)  
 b. *Uśmiech rozjaśnił twarz.*  
 'The smile lightened the face.' (Instrument)  
 c. *Słońce rozjaśniło krajobraz.*  
 'The sun lightened the view.' (Natural Force)

Based on the findings of root-based morphosyntax (in particular Alexiadou and Doron 2012), we propose to assign the following structure to the causative change of state verbs, where the (unspecified cause) root occupies the position of the predicate of the event causing the state in its complement (see (11) above). The structure below is given for the verb *rozmiękczyć* 'soften':



<sup>25</sup> The symbol for the category of voice – v (the Greek small letter 'nu') has been taken from Alexiadou and Doron (2012).

Following Embick's (2009) insights we claim that the causative head is not necessary in such structures as the causative meaning results from the structure in which the causing event ( $v_1$ ) and the caused state ( $ST_1$ ) are sisters (see (10) and (11) above). The semantic component automatically interprets the structure as causative (cf. Embick 2009; Koontz-Garboden 2012). Other sources, e.g. Alexiadou and Doron (2012), insist on the presence of a separate causative head  $\gamma$ , but since the meaning can be gleaned from the structure, a separate causative projection can be dispensed with. Polish unaccusatives are associated with causative meaning under all circumstances (see sections 3.1, 3.2), so proposing a structure where causation results directly from the grammatical form of unaccusatives is more convincing than supplementing unaccusatives with causative heads, which in principle can be merged or not, and thus, theoretically, they can be dispensed with. The solution along the lines proposed by Embick, in which the part of the structure below the voice node ( $v$ ) resembles the structure for unaccusative verbs, excludes the tentative dispensing with causation for unaccusatives (as supported by the Polish data).

## 5.2. *Roz-* as a voice head in Polish causatives

Notice that the morpheme *roz-* is believed to realize the voice head in (21) above. This claim is not haphazard. First of all we have mentioned that the derivation with *roz-* is characterized by the presence of an additional argument: the transitive causative derivatives differ from unaccusatives first and foremost in the presence of the external argument in their semantics and formal structure (see (12)–(17) above). Thus the suggestion that *roz-* is a voice head, voice being responsible for the introduction of the external argument (see Kratzer 1996; Pylkkänen 2008), finds justification in the data.

However, there are additional arguments. Anticausatives are believed not to possess the active voice head, but a special non-active voice head represented as  $\mu$ . In this assumption we follow Alexiadou and Doron (2012), who propose an analysis of anticausatives as belonging to the sphere of special non-active morphology. Significantly, in the Polish data we may notice that some formations with non-active heads, i.e. morphologically marked anticausatives, disprefer the *roz-* derivational morpheme, while with other verbs the morpheme appears frequently and it performs a number of additional semantic functions, in principle not excluded by anticausatives.

Szymanek (2010: 166–169) discusses a few of such functions: *roz-* may signify parting and dispersion, e.g. *rozjechać się* 'drive apart'; distribution, e.g. *rozesłać* 'send away'; splitting, fragmentation, e.g. *rozciąć* 'cut up'; the reversative function, e.g. *rozebrać* 'dismantle'; the evolutive function, e.g. *rozkwitnąć* 'flower'. Below we will supply some examples which show that the causative variant takes the morpheme *roz-* naturally, while its anticausative counterpart cannot co-occur with this morpheme in any of the above senses:

- (21) a. *Wiosna rozzieleniła lasy.* 'Spring made woods green.'  
 b. *Lasy zieleniały.* 'Woods were green'/\**Lasy rozzieleniały.*  
 c. *Wiatr rozrzedził mgłę.* 'Wind dispersed the fog.'  
 d. *Mgła rzedła.* 'The fog dispersed'/\**Mgła rozrzedła.*

On semantic grounds nothing prevents these verbs from co-occurring with *roz-* in one of the few senses presented above. For instance the *roz-* with the sense of 'disperse' would be very appropriate in the case of \**Mgła rozrzedła* 'The fog drifted apart'. Nevertheless, such combinations do not get formed as a rule. The answer why such a situation arises may conceivably be connected with the fact that *roz-* is blocked by the non-active voice head in these anticausatives as *roz-* realizes the active voice head. Presumably, two voice heads cannot appear at the same time.

Exceptions to this regularity should be mentioned, like the inchoative form in (23) below:

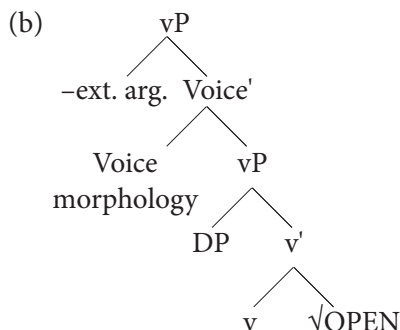
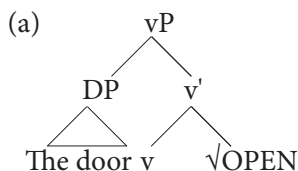
- (22) a. *Woda rozmiękczyła papier.* 'Water softened the paper.'  
 b. *Papier rozmiękł.* 'The paper softened.'

Such examples are isolated but a more disquieting body of data is the class of anticausatives possessing a clear derivational marker of their morphosyntactic status, the clitic *się*. They are much more likely to take up *roz-*, e.g.:

- (23) *rozgrzewać się* 'warm up', *rozkladać się* 'rot', *rozleniwiać się* 'grow lazy', *rozluźniać się* 'loosen up', *rozmrozić się* 'de-frost', etc.

Recall that Alexiadou (2010) proposes the non-active voice head just for such clearly marked anticausatives (see 24b) in contradistinction to other unaccusatives, which have a simpler structure (see 24a):

- (24) Unmarked unaccusatives      Derivationally marked anticausatives



Morphological data connected with the distribution of *roz-* in Polish strongly suggest that the distinction proposed by Alexiadou (2010) may be on the right

track. Voice (whether active, or non-active) introduces in its head morphological marking, which in the case of Polish anticausatives in (23) would be the discontinuous morpheme: *roz-...się*.<sup>26</sup> The morpheme would be appropriately lined up in the phonological component, not in the morphosyntax itself. On the other hand morphologically simpler unaccusatives in (21) might be produced without the voice projection (see 24a) and consequently could not take *roz-*, the active voice head, nor *roz- się*, a non-active voice head. Notice that the forms *?rozzielenieć się*<sup>27</sup> ‘grow green’, *\*rozrzednąć się* ‘grow thin’, *\*roztrzeźwieć się* ‘grow sober’, *\*rozweseleć się* ‘grow cheerful’ (cf. 21) are not grammatical ei-

<sup>26</sup> An anonymous reviewer notices that the non-active head introduced in this paper has the form *roz- się*, which strangely resembles the active voice head *roz-*. He/she also claims that the correlation between *roz-* and *roz-...się* words is ‘so productive that such independence seems suspicious’. However, the correlation is not as great as it might seem at first sight. Many *roz-* forms have the corresponding *roz-...się* counterparts, but some of them are reflexive formations and some stay unpaired (e.g. (i) below). We cannot go into the problem of reflexive formations too deeply as it is a very broad area of study, but reflexives would share a good part of the structure and the active voice head with the group of formations with *roz-* described in the text, and the *się* marker would be the exponent of reflexivization (see e.g. Reinhart and Siloni 2005; Alexiadou and Doron 2012 for similar correspondences in French, Greek and other languages).

(i) *rozbroić* ‘disarm’ vs. *rozbroić się* ‘disarm, refl.’, *rozliczyć* ‘to square up with sb.’ vs. *rozliczyć się* ‘to square up with sb., refl.’, *rozciąć* ‘cut through’ vs. *rozciąć się* ‘cut through, refl.’, *rozgromić* ‘make sb. perish’ vs. *\*rozgromić się* ‘make sb. perish, refl.’

As argued in this work, causatives and anticausatives are based on the same roots (see 5.1), so the corresponding causative and anticausative forms are to be expected. The direct derivational relationship between them is lost indeed (see however a criticism of derivational approach to causative – anticausative verbs in Everaert et al. 2012a: 13–15), but the roots together with the shared portion of verbal structure safeguard the correspondence.

The formal similarity of affixes should not worry us as most affixes in Polish are poly-functional (see e.g. descriptions of most verbal prefixes in Szymanek 2010). In addition, quite a few *roz- ... się* anticausative forms do not have the corresponding *roz-* causative counterparts, which may be used to argue in favor of our solution. Some examples are given in (ii) below:

(ii) *rozchichotać się* ‘begin to chuckle away’ vs. *\*rozchichotać kogoś* ‘make somebody chuckle away’, *rozchlipać się* ‘begin to whimper’ vs. *\*rozchlipać kogoś* ‘make sb. whimper’, *rozkrochmalić się* ‘go all soft’ vs. *\*rozkrochmalić kogoś* ‘make sb. go all soft’, *rozłazić się* ‘go into pieces’ vs. *\*rozłazić coś* ‘make sth. go into pieces’, *rozchorować się* ‘fall ill’ vs. *\*rozchorować kogoś* ‘make sb. fall ill’, *rozkraczyć się* ‘break down (about a car)’ vs. *rozkraczyć coś* ‘make sth. break down.’

Such gaps present no problem in root-based approaches as both structures arise independently of each other, but in derivational ones they constitute inexplicable exceptions. Thus the correspondences mentioned by the reviewer need not be held against a root-based morphological model.

<sup>27</sup> A random Google search has returned a single use of this form in the context: *Gdy opadał, rozzieleniały się łąki, [...]* ‘When it was falling, the meadows were becoming green’ in the memoirs of a poet, Izabela Płatkowska-Śnieżawska. This is precisely the use which should have been excluded. However, as we have stressed before, this material, although created in the syntax, is then entered in the lexicon so the existence of exceptions is to be expected.

ther.<sup>28</sup> The fact that the considerations concerning causatives in Polish neatly tie in with the quite independent analysis of anticausatives in the languages researched by Alexiadou (2010) and Alexiadou and Doron (2012) gives a new momentum to our small-scale Polish-based study.<sup>29</sup>

### 5.3. *Roz-* causatives versus stative verbs

In Polish more classes of roots undergo morphological valency-upgrading with the use of *roz-* than just these present in unaccusatives (see 5.1). *Roz-* verbs quite frequently have stative<sup>30</sup> counterparts, e.g. verbs of emission, and other state verbs. These roots do not adhere to Schäfer's (2007) regularity, so his conception does not fit the Polish data.

- (25) a. *Burza rozfalaowała wodę.* 'The tempest made water roll in waves.'  
 b. *Woda falowała.* 'Water rolled in weaves.'  
 c. *Słońce roziskrzyło śnieg.* 'The sun made snow sparkle.'  
 d. *Śnieg iskrzył.* 'Snow sparkled.'

However, not all stative verbs are consistent with the causative meaning as we have already shown in (11) above. Some fail to derive *roz-* causatives:

- (26) a. *\*Dziewczyna rozmieszkala swoją matkę.*  
 'The girl made her mother live (somewhere).'  
 b. *\*Akt stworzenia rozistniał świat.*  
 'The act of creation made the world exist.'<sup>31</sup>

<sup>28</sup> Such a solution would partly disagree with our previous findings concerning unaccusatives in Polish (see e.g. Malicka-Kleparska 2012a).

<sup>29</sup> Much remains to be worked out in this area. An anonymous reviewer has noticed a problem concerning certain inchoative verbs which also differ in grammaticality, e.g. *zieleniały* (atelic)/*\*rozzieleniały się*/ *rozzieleniły się* (telic) 'They grew green'. Such examples cannot be pooh-poohed away as irregularities since they are numerous. The difference in grammaticality has something to do with the Aktionsart of these verbs, but telicity alone cannot be taken to be the criterion deciding about the grammaticality of anticausative formations: both *\*rozmieszkac* and *rozjarzac* would be atelic. Certainly the data we have considered in this paper are only a small piece in a much more extensive jigsaw puzzle.

<sup>30</sup> Palmer (1974: 73) defines these verbs as: 'verbs which refer not to activity but to a state or condition'. We have verified their status by applying to prospective statives the tests relevant to Polish, adopted from Michaelis (2011) and Fábregas and Marín (2012), which cannot be presented here because of the space limitations.

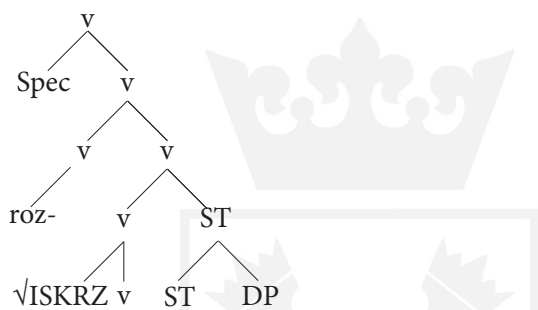
<sup>31</sup> An anonymous reviewer has pointed out the discrepancy in grammaticality between the causative forms: *\*rozespać* and *uśpić* 'put to sleep'. The verbs are obviously based on the same root, so they should be equally grammatical or ungrammatical. *Roz-* is not the only voice head associated with transitive change of state verbs. The properties of the distribution of particular heads are yet to be discovered. So far we have established that *roz-* appears in the structures where an eventive part can be identified, so the troublesome gap would be created by *\*roześpić*, rather than *\*rozespać*. Also, the unaccusatives sharing parts of structure with *roz-* causatives

- c. \**General rozpostrzegł żołnierza.*  
 ‘The general has made the soldier perceive.’

Consequently, we have to distinguish such statives whose roots derive causatives from statives whose roots do not derive them.

We would like to put forward the claim that the roots which allow the derivation with *roz-* are such that can appear both as predicates of events and as predicates of states, while those which refuse to take up *roz-* are only good predicates of states. Therefore, the first class will be able to appear in the two structures in (27) and (28):

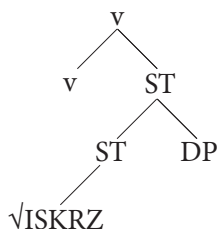
(27) Roots with features of predicates of events



The structure represents the causative configuration already familiar from section 5.1, here illustrated by *Słońce roziskrzyło śnieg* ‘Sunlight made snow sparkle.’

As the root *iskrz* can belong both to predicates of events and to predicates of states, it may also occupy another position in the structure, as in (28):

(28) Roots with features of predicates of states



In this case the verb will not be able to take the active voice head *roz-*, which introduces the external argument in structures possessing the event element, as the earlier discussion seems to suggest. Instead, such structures as the one

were actual words. Possibly *roześcić* is not an ungrammatical form, but rather not an actual form, which seems very probable in the light of the fact that another causative form based on the same root, but with the *u-* voice head exists in Polish.



in (28) derive true stative verbs, without external arguments introduced by the active voice head, e.g. *Śnieg iskrzy* 'Snow sparkles.'

This conclusion is justified as the entailment facts connected with the stative structures work differently than with unaccusatives (compare (4), (5) above):<sup>32</sup>

- (29) a. \**Śnieg nie iskrzy, to słońce go roziskrzyło.*  
 'The snow is not sparkling; the sun has made it sparkle.'  
 b. \**Woda nie faluje, to wiatr ją rozfalował.*  
 'The water is not rolling in waves; the wind has made it roll.'

The root *iskrz*, if set in the predicate of event position in a structure headed by a non-active voice head, will show the opposite entailment facts:

- (30) a. *Woda nie rozfalowała się, to wiatr ją rozfalował.*<sup>33</sup>  
 'Water has not rolled in waves, the wind has made it roll.'<sup>34</sup>  
 b. *Włosy nie jaśnieją, to słońce je rozjaśnia.*  
 'Hair does not grow lighter, the sunlight makes it grow lighter.'

The causative verbs with corresponding stative verbs, if analyzed along the lines suggested by Embick's (2009) ideas, but developed for the causative here, seem to support the analysis already presented for the previously analysed group of verbs. If set in the predicate of event position, the appropriate root (marked lexically as +event, +state, for example) derives *roz-* causatives. If equipped with the non-active voice head in such a position, it still reveals the causative effect when an appropriate anticausative is formed. On the other hand, if the root is set in the predicate of state structure, it shows properties of non-causative stative verbs. Not all roots of stative verbs are marked as +event, +state; these marked as predicates of states only have no corresponding causative *roz-* structures and do not show the causative meaning.<sup>35</sup>

<sup>32</sup> I have been alerted to this difference by an anonymous reviewer, who set side by side the examples with conflicting entailments of clauses with identical roots. These examples made me change the original idea voiced in the previous version of this paper. The present solution is, hopefully, more adequate.

<sup>33</sup> The example has been contributed by an anonymous reviewer.

<sup>34</sup> Many questions will have to remain unanswered here. One is the problem how particular non-active heads are matched with particular roots. Is that random, analogy-driven or are there regularities to be discovered? Also the relationship between telicity of the verb and types of unaccusatives available has to be analyzed separately. See, however, Krifka (1989); Dowty (1991); Willim (2006).

<sup>35</sup> We have not been able so far to discover specific semantic characteristics that would allow us to classify roots as predicates of states or predicates of events on independent grounds. We are convinced that such characteristics exist. Possibly the line of reasoning suggested in fn. 16 might be on the right track, namely, roots without the path meaning are appropriate for predicates of states only and those with this meaning for predicates of events.

It has to be admitted, nevertheless, that the situation is not so crystal-clear as we might have wished. While researching the causative inferences of unaccusatives, we have applied also the *sam z siebie* test. The statives in (11) above behave as predicted, that is they fail the test. The statives with 'double face' roots behave as if they had a trace of causative meaning:

- (31) a. *Śnieg iskrzy sam z siebie*. 'Snow sparkles by itself.'  
 b. *Woda faluje sama z siebie*. 'Water rolls in waves by itself.'  
 c. *Twarz jaśnieje sama z siebie*. 'The face radiates by itself.'

All we can say at present is that perhaps the test with this specific prepositional phrase does not test for causation, but for the presence of the eventive feature with the root (as +state roots fail the test, see (11) above).

#### 5.4. *Roz-* derivatives sharing roots with experiencer verbs

Another extensive group of roots to which the prefix *roz-* is added to form causatives consists of experiencer roots, which also constitute the base for subject experiencer verbs. Again they do not fit Schäfer's (2007) classification of the roots which can participate in the causative alternation, as they are internally caused. Here we find such formations as:

- (32) *marzyć* 'dream' – *rozmarzyć* 'make dream', *kochać* 'love' – *rozkochać* 'make love', *miłować* 'love' – *rozmiłować* 'make love', *złościć się* 'be irritated' – *roz-złościć* 'make irritated', *gniewać się* 'be angry' – *rozgniewać* 'make angry', *histeryzować* 'be hysterical' – *rozhisteryzować* 'make hysterical', etc.

Subject experiencer verbs behave like stative verbs with respect to various tests (see fn. 30).

The causatives formed on the basis of these roots share the structure with other stative verbs (see (28) above). In our opinion the fact that they constitute a semantic group of experiencer verbs has no bearing on their structural representation. What distinguishes their roots from the ones which appear in stative verbs is the character of the thematic role that they are associated with in the lexicon. Subject experiencer verbs have Experiencer thematic roles to apportion,<sup>36</sup> while statives are probably associated with the lexically specified Theme role. The results of the *sam z siebie* test also show that experiencer verbs pattern together with the statives with roots in the predicate of event function:

<sup>36</sup> Possibly the role is rather the Sentient, in terms of the role system in Everaert et al. (2012), since the role is realized externally to the lowest root projection and Sentients are believed to be merged externally. More in-depth investigations of these roles and mechanisms of their assignment are certainly in order.

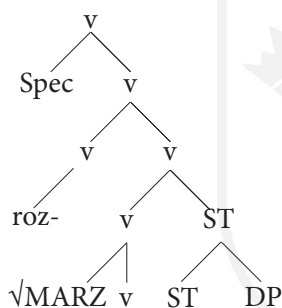
- (33) a. *Dziewczyna marzyła sama z siebie.* ‘The girl was dreaming by herself.’  
 b. *Dziewczyna kochała sama z siebie.* ‘The girl loved by herself.’

Like with other statives the entailment test gives negative results testing for causation:

- (34) a. \**Dziewczyna nie marzyła, to wieczór ją rozmarzył.*  
 ‘The girl did not dream, the evening made her dream.’  
 b. \**Dziewczyna nie kochała, to ty ją rozkochaleś.*  
 ‘The girl did not love, you made her love.’

Grouping stative (+event, +state) roots and subject experiencer roots together is an idea which tallies with other analyses which identify stative verbs and experiencer verbs (see e.g. an extensive study by Rothmayer 2009), so our results are not ad hoc. In our model both groups will belong to the class of roots which are eligible as predicates of events and thus can be situated in the structure deriving causative verbs:

- (35) Causatives based on subject experiencer verbs



The derivation can be illustrated for instance with the sentence *Wieczór rozmarzył Marię* ‘The evening made Mary dream.’

The root types we have mentioned so far in section 5 seem to be varied, but in all the cases it is possible to propose a similar structure, from which the causative meaning can result. Similarly, it is possible to assume that all the roots belong to the class of roots which are appropriate for predicates of events. Their varied morphosyntactic behaviour in non-causative structures can be accounted for by claiming that some of them are also available as predicates of states (statives, subject experiencer verbs). Thus we have been able to propose one uniform structure for *roz-* causatives in Polish, and we have also delimited the roots which are available for this derivation.

At least one reservation has to be made here. Not all predicate of event roots can derive causatives. Unergatives, for instance, will be based on precisely such roots additionally specified for the agentive arguments. There exists

a limitation disqualifying the roots which are good predicates of events with agentive roles from the causative derivation. This limitation can be overridden occasionally (see fn. 14) though, which might suggest that the roots are of the appropriate type, i.e. they are predicates of events.

## Conclusions

In this paper we have presented a possible model for the derivation of certain causative verbs in Polish. The analysis has been conducted within the root-based model of generative morphosyntax. Within this system causativization and argument addition have been shown to be separate elements of the grammatical description, causativization being ascertained on the basis of a particular structural configuration consisting of the causing event and resultant state being juxtaposed in a structure. *Roz-*, the morphological head introducing the voice projection, has been argued not to be entangled with the causative layer of the derivation. The roots which in Polish allow the formation of causatives with the *roz-* head belong to one category – good predicates of events. The roots which are only predicates of states are excluded from forming causative transitive structures. Additionally, we have found interesting interactions of the causative structures and the structures with the non-active voice head, as proposed by Alexiadou and Doron (2012), which cannot take the active voice head *roz-*, as predicted by our analysis. Similarly, the unaccusatives which might not be able to take any voice projection are incapable of taking *roz-* either. Consequently, a local analysis of one causative prefix in Polish may have wider significance as supporting the general overview of non-active morphology proposed for morphologically marked anticausatives. The analysis poses new questions with respect to the area of Polish causative morphosyntax: 1. is the generalization concerning the types of roots allowing causative formation with *roz-* specific to this particular morpheme or does it obtain for other patterns of causative formation in Polish (in other languages)?; 2. how are theta roles associated with particular roots apportioned to structural positions (especially external vs. internal)?, and 3. what are the relationships obtaining between valency rearrangement and telicity and/or aspect. These problems await further research, which makes the whole area of verbal valency so fascinating.

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